

WHAT IS CLAIMED IS:

1. A method of predicting future web navigation sequences of users visiting a web site, comprising:
  - 5 monitoring web navigation sequences performed by each user while browsing the web site;
  - storing the monitored web navigating sequences; and
  - analyzing the stored web navigation sequences to predict future user patterns.
- 10 2. The method of claim 1, further comprising:
  - providing the analyzed web navigation sequences to a web content manager and a web site administrator.
- 15 3. The method of claim 2, further comprising:
  - modifying the web site by the web administrator and the web content manager based on the analyzed information to enhance the effectiveness of the web site usage by the users.
- 20 4. The method of claim 1, further comprising:
  - analyzing the stored web navigation sequences further to collect user information.
5. The method of claim 4, further comprising:
  - 25 storing the predicted user patterns and the collected user navigating information within a database structure of the web site.
6. The method of claim 1, wherein monitoring the web navigation sequences of each user comprises:
  - 30 monitoring electronically the web navigation sequences of each user.

7. The method of claim 1, wherein navigating sequences comprises:  
page shift sequences associated with each of the navigating sequences.
- 5 8. The method of claim 7, wherein monitoring each of the navigating sequences  
comprises:  
monitoring page shift sequences associated with web navigation sequences.
9. The method of claim 8, wherein monitoring page shift sequences comprises:  
10 monitoring each of the users navigating from a present page shift sequence  
to a next page shift sequence.
10. The method of claim 9, wherein the present page shift sequence comprises:  
the user navigating from a previous web page to a present web page.
- 15 11. The method of claim 10, wherein the next page shift sequence comprises:  
the user navigating from the present web page to a next web page.
12. The method of claim 11, wherein storing the monitored web navigation  
20 sequences comprises:  
storing the page shift sequences associated with the web navigation  
sequences within the database structure of the web site.
13. The method of claim 12, wherein analyzing the stored web navigation  
25 sequences further comprises:  
separating the page shift sequences from the stored page shifts associated  
with web navigation sequences;  
counting the number of occurrences of each page shift sequence from the  
separated page shift sequences; and

analyzing the counted number of occurrences to predict the future web site user patterns.

14. The method of claim 13, wherein analyzing the counted number of occurrences comprises:  
5 computing a probability of navigating from the present page shift sequence to the next page shift sequence based on using the counted number of occurrences.

15. The method of claim 14, wherein analyzing the web navigation sequences to predict user patterns comprises:  
10 using a probability associative matrix algorithm based on a two dimensional matrix including N rows for each stored web navigation sequence and M columns including separated page shift sequences, number of counted occurrences of each of the page shift sequences, and the probability associated with each of the number of  
15 counted occurrences to predict future user patterns.

16. A computer-implemented on-line web site for predicting navigation sequences of users visiting a web site, comprising:  
a web server including browsable web pages of the web site, wherein the  
20 web pages include products and services offered by the business;  
a web-monitoring tool to monitor web navigation sequences performed by each user while browsing the web pages of the web site; and  
a PAM analyzer to analyze each of the monitored web navigation sequences to predict the web navigation sequences of future users visiting the web site.

25  
17. The system of claim 16, further comprising:  
a web site administrator to implement changes to the web site based on the analysis of the PAM analyzer.

30

18. The system of claim 17, further comprising:  
a database structure to store web navigation sequences performed by each user visiting the web site.

5 19. The system of claim 18, wherein the PAM analyzer further analyzes the web navigation sequences to collect user navigation information.

20. The system of claim 19, wherein the database structure further stores collected user navigating information.

10

21. The system of claim 16, wherein the web-monitoring tool monitors electronically the web navigation sequences of each user visiting the web site.

22. The system of claim 16, wherein each of the navigating sequences  
15 comprises:  
page shift sequences.

23. The system of claim 22, wherein the PAM analyzer separates page shift sequences from the stored page shift sequences associated with each of the web  
20 navigation sequences,  
wherein the PAM analyzer further counts the number of occurrences of each page shift sequence from the separated page shift sequences, and  
then the PAM analyzer analyzes the counted number of occurrences to predict the future user web site navigation patterns.

25

24. The system of claim 23, wherein the PAM analyzer monitors each user's navigating from a present page shift sequence to a next page shift sequence.

25. The system of claim 24, wherein present page shift sequence comprises:  
30 navigation from a previous web page to a present web page.

26. The system of claim 25, wherein next page shift sequence comprises:  
navigation from a present web page to a next web page.
27. The system of claim 26, wherein the PAM analyzer computes a probability  
5 of navigating from the present page shift sequence to the next page shift sequence  
based on using the counted number of occurrences.
28. The system of claim 27, wherein the PAM analyzer includes:  
a probability associative matrix algorithm based on a two dimensional  
10 matrix including N rows for each stored web navigation sequence and M columns  
including separated page shift sequences, number of counted occurrences of each of  
the page shift sequence, and probability associated with each of the number of  
counted occurrences to predict user patterns.